

6. Helen

Program Name: Helen.java

Input File: helen.dat

Helen has taken over your Algebra class and is making all of you do all of her homework for the whole year. You need to write a program to solve equations for Helen so that she doesn't make you clap erasers.

Input: The input will begin with an integer, n ($0 < n \leq 1000$), denoting the number of test cases to follow. Each test case will consist of a string of characters denoting an equation, consisting of any of the following characters:

- **term** – A term will always be either a constant or a variable.
- **constant** – A constant will be an integer value.
- **variable** – A variable will be a single lowercase alphabetic character, which may or may not have a coefficient (a number before the variable denoting the number to multiply by the variable). The coefficient will always be an integer (positive or negative) if present.
- **symbol** – A symbol will be one of the following 4 symbols (*, /, +, -).

The equation will always be in the following format **with single spaces separating the items:**

term symbol term = term

It is guaranteed that only one of the terms will be a variable (the other two will be constants).

Output: For each equation, output the variable that was solved for, followed by a space, an equal sign, another space, and the corresponding value (rounded to 3 decimal places).

Sample input:

```
3
2x + 7 = 15
13 * 26 = 3x
x - 2 = 9
```

Sample output:

```
x = 4.000
x = 112.667
x = 11.000
```